

# Engineering Technician End Point Assessment Plan (Issue Phase 1: 2017)

Covering the following occupational roles:

1. Aerospace Manufacturing Fitter
2. Aerospace Manufacturing Electrical/Mechanical and Systems Fitter
3. Aircraft Maintenance Fitter/Technician (Fixed & Rotary Wing)
4. Airworthiness Planning, Quality and Safety Technician
5. Maritime Electrical Fitter
6. Maritime Mechanical Fitter
7. Maritime Fabricator
8. Maritime Pipeworker
9. Machinist – Advanced Manufacturing Engineering
10. Mechatronics Maintenance Technician
11. Product Design and Development Technician
12. Toolmaker and Tool and Die Maintenance Technician
13. Technical Support Technician

(NB Engineering Technician EPA Issue Phase 2 to be produced 2018)

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## Foreword

*The Engineering Technician Apprenticeship is delivered through the following approach:*

- *A Foundation Phase*
- *A Development Phase*
- *An End Point Assessment*

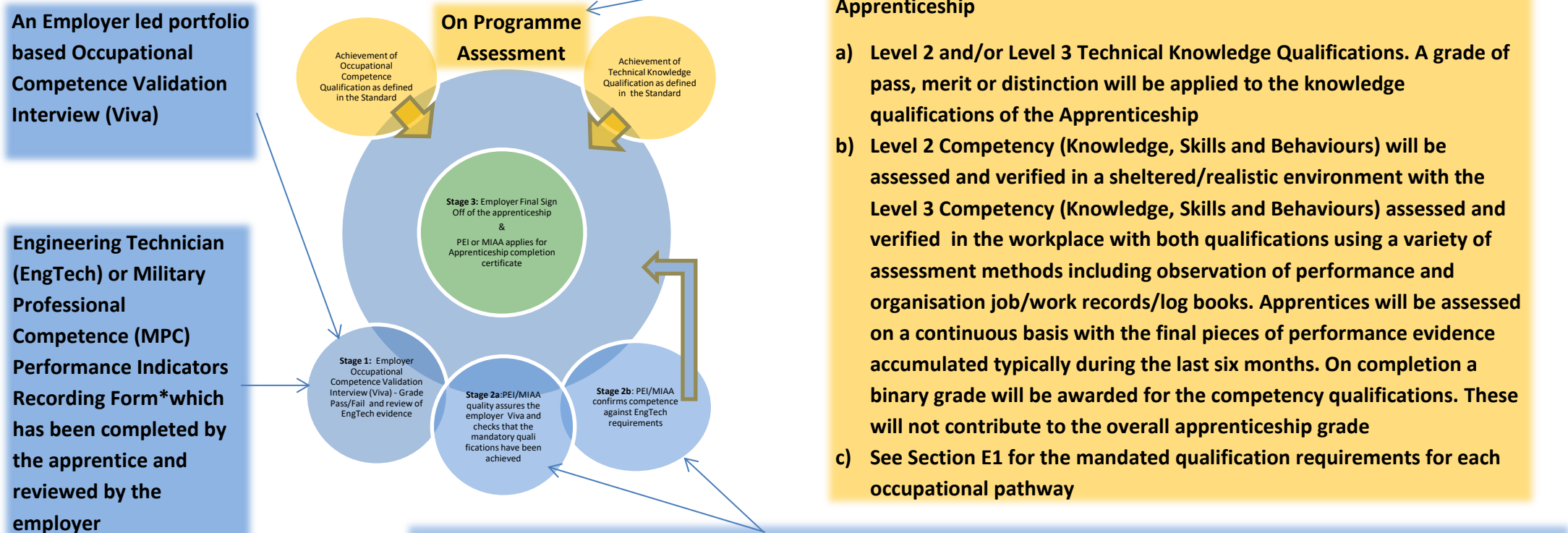
*We have:*

- 1) *introduced a formal gate review at the conclusion of the foundation stage. Apprentices will not progress beyond this without successful completion of this stage.*
- 2) *introduced a viva and formal overall assessment of competence as part of the end point assessment for the Advanced Manufacturing and Engineering Sector, where, Apprentices will need to demonstrate skills, knowledge and behaviours developed across the Apprenticeship.*
- 3) *introduced an alignment of competence to “EngTech” requirements - the recognised generic professional institution standard for an Engineering Technician. This is totally new and is supported by all the relevant Professional Engineering Institutions (PEIs). This provides an opportunity to establish future development activity for apprentices, linked to continued professional development. In the case of the Military we have introduced an alignment to the trade specific Military Professional Competence (MPC) requirements.*

*Due to the safety critical and complex nature of work activities undertaken in Advanced Manufacturing and Engineering, which is often externally regulated, training and on-programme assessment must be carried out ‘on a continuous basis’ to ensure that the skills, knowledge and behaviours that relate to organisation processes and procedures are fully imbedded in the apprentice’s skill set. Because of the safety critical nature of the work roles and the risks to both the apprentice and the organisation any deficiencies or gaps in skills, knowledge and behaviours must be identified early and corrected rather than being allowed to proliferate, only then to be picked up at the end of training when it is too late. Moreover, employers in the Advanced Manufacturing and Engineering sector are responsible for the competence of their employees and nobody other than the employer will be able to confirm occupational competence. Therefore the assessment process we have adopted is more robust than ever before with the End Point Assessment comprising of Occupational Competence assessed by the employer and Professional Competence, assessed by a relevant Professional Engineering Institution or Military Independent Assessment Authority. The assessment model, including end point, makes the Standard accessible and appropriate for employers, including SMEs. The mandatory requirements have been carefully selected to ensure that skills, knowledge and behaviours can be transferred across the Advanced Manufacturing and Engineering Sector.*

## Section A: Summary of End Point Assessment

A1 Diagram 1a: End Point Assessment for an Engineering Technician



NB \* = Evidence for EngTech/MPC criteria may be uploaded and recorded online depending on the relevant PEI/MIAA processes and procedures.

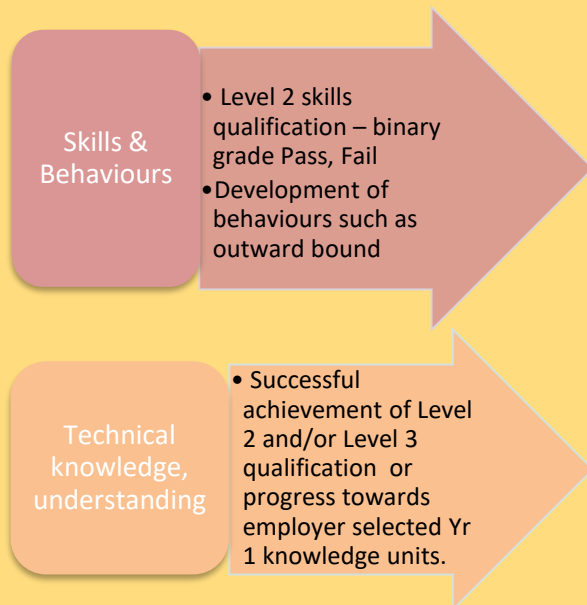
**Professional Engineering Institution (PEI) or Military Independent Assessment Authority (MIAA) - End Point Assessment is an independent assessment of behaviours, knowledge, skills and generic engineering competencies for an Engineering Technician requirements as defined by the UK-SPEC, regulated by the Engineering Council and/or Military Professional Competence (MPC) regulated by the relevant Military Independent Assessment Authority (MIAA). The PEI/MIAA will also undertake an independent quality assurance of the Employer Viva Interview documentation and checks that the employer approved mandatory qualifications have been achieved and certificated**

**In order for the PEI/MIAA to apply for the apprenticeship completion certificate the PEI will be in receipt of and have quality assured the Employer Portfolio Based Occupational Competence Viva Interview document (Stage 1) signed by the employer and confirmed that the apprentice has achieved the correct mandatory qualifications specified in the Standards and Assessment Plan (Stage 2a). Confirmed that the apprentice has met the criteria for EngTech/MPC (Stage 2b) and have received a final overall apprentice sign off from the employer (Stage 3).**

**A2 Diagram 2a: Summary approach to “On-Programme” and End Point Assessment – Engineering Technician Gateway 1 Gateway 2**

Certificate

### On Programme Assessment: Foundation Phase



**Mandatory Qualifications**  
See Section E1 for details on the mandated qualification requirements

### On Programme Assessment: Development Phase



**Mandatory Qualifications**  
See Section E1 for details on the mandated qualification requirements

### End Point Assessment

The employer undertakes a Portfolio based Occupational Competence Validation Interview (Viva)

A nominated Professional Engineering Institution (PEI) or Military Independent Assessment Authority (MIAA) undertakes the independent assessment to determine if the apprentice has met the Engineering Technician requirements as defined by the UK-SPEC or relevant Military Professional Competence (MPC) requirements. The PEI/MIAA will also undertake an independent quality assurance of the Employer Viva Interview documentation and checks that the employer approved mandatory qualifications achieved during the on programme phase and checked at Gateway 2 have been achieved and certificated (See Diagram 1a for full illustrated details of End Point Assessment)

**Apprentice Completion Certificate: Final employer Sign Off & PEI/MIAA applies for the Apprentice's completion certificate.**

#### Gateway 1: Review & Assessment – Undertaken by the employer

The following must be completed before the apprentice can progress to the Development Phase of the apprenticeship:

- The employer specified Level 2 Foundation Occupational Competence Qualification
- Where applicable the Level 2 Foundation Knowledge Qualification and/or satisfactory achievement /progress towards Yr 1 Level 3 Technical Knowledge units as applicable to the occupational pathway requirements
- Satisfactory progress towards the employer required behaviours

#### Gateway 2: Review & Assessment - Undertaken by the employer

In order to be ready for End Point Assessment the apprentice must have achieved:

- Pass, Merit or Distinction in the selected Level 3 Technical Knowledge Qualification
- A binary grade Pass in the Level 3 Occupational Competence Qualification
- The required Behaviours aligned to EngTech or Military Professional Competence
- English and Maths qualifications at Level 2

## Section B: Detailed explanation of the end point assessment

### B1 What skills, knowledge and behaviours are being assessed?

#### B1.1 Occupational Competence

As part of the End Point Assessment Viva Interview employers will assess apprentices against the core and the relevant occupational specific knowledge, skills and behaviours set out in the Standard pathways 1 to 13.

#### B1.2 Professional Competence (EngTech)

Employers in partnership with relevant Professional Engineering Institutions (PEIs) will also assess the apprentices' competence against the internationally recognised professional standard for an Engineering Technician (EngTech). Apprentices will be assessed against the following criteria (with the exception of the Military Professional Competence assessed via the Military Independent Assessment authority) irrespective of which option they subsequently take:

- Use engineering knowledge and understanding to apply technical and practical skills
- Contribute to the design, development, manufacture, construction, commissioning, operation or maintenance of products, equipment, processes, systems or services
- Accept and exercise personal responsibility
- Use effective communication and interpersonal skills  
Make a personal commitment to an appropriate code of professional conduct, recognising obligations to society, the profession and the environment.

#### B1.3 Military Professional Competence (MPC)

Employers in partnership with the Military Independent Assessment Authority (MIAA) will also assess the apprentices' competence against the Military professional standard for the appropriate options. Apprentices undertaking these options will be assessed against the following criteria:

- Use trade knowledge and understanding to apply technical and practical skills
- Contribute to the maintenance, repair and overhaul of products, equipment, processes, systems or services
- Accept and exercise personal responsibility
- Use effective communication and interpersonal skills
- Make a personal commitment to an appropriate code of professional conduct, recognising obligations to society, the profession and the environment.

Note. All Military apprentices will meet the requirements for EngTech recognition should the apprentice wish to apply for membership.

## **B1.4 Continuous Professional Development (CPD)**

Refers to the process of tracking and documenting the skills, knowledge and experience that an individual gains both formally and informally. It's a record of what they experience, learn and then apply. If the apprentice does decide to apply for registration with a relevant Professional Engineering institution at EngTech level, they must be committed to maintaining and enhancing their competence. They will be required to show evidence that they have taken steps to ensure this, and that they intend to continue to do this in line with the CPD Code for Registrants.

### **B1.4.1 What is it for?**

The CPD process helps the individual manage their own development on an ongoing basis. Its function is to help them record, review and reflect on what they learn. The key features of the CPD process:

- be a documented process
- be self-directed: driven by the individual and not the employer
- focus on learning from experience, reflective learning and review
- help individuals to set development goals and objectives
- include both formal and informal learning.

### **B1.4.2 What are the benefits?**

It can help individuals to reflect, review and document their learning and to develop and update their professional knowledge and skills. It is also very useful to:

- provide an overview of their professional development to date
- remind them of their achievements and how far they have progressed
- direct their career and helps them keep their eye on their career goals
- uncover gaps in their skills, knowledge and behaviours
- demonstrate their professional standing to employers and/or clients
- help with their career development.

## **B2 Assessment Methods**

This assessment must take place in the final months of the Apprenticeship, using the following methods:

- An Occupational Competence Validation Interview (Viva) drawing from a portfolio of evidence of occupational competence



- Professional competence assessment undertaken by independent assessor(s) from the relevant PEI/MIAA [using the Performance Indicators Recording Form]
- Final employer endorsement of occupational and professional competence and overall completion of the apprenticeship

To support the end point assessment, Employers, Professional Engineering Institutions (PEIs) and the Military Independent Assessment Authority (MIAA) have developed the following:

- a) an Occupational Competence Validation Interview (Viva) Recording Form and supporting guidance including how to prepare and undertake an effective and robust Viva interview and the technical requirements for employer assessors
- b) an Engineering Technician (EngTech) or Military Professional Competence (MPC) Performance Indicators Recording Form and supporting guidance

These can be accessed by contacting, as applicable, the relevant Professional Engineering Institution (PEI) or Military Independent Assessment Authority approved on the Register of Apprentice Assessment Organisations to deliver the end-point assessment for this standard.

These methods of assessment are designed to test the following:

| EngTech Professional Competencies  | Engineering Technician Core Knowledge, Skills and Behaviours   |
|--|--|
| Use engineering knowledge and understanding to apply technical and practical skills  | All nine core knowledge and skills statements listed in the standard, and all the occupational specific statements |
| Contribute to the design, development, manufacture, construction, commissioning, operation or maintenance of products, equipment, processes, systems or services | All eight core skills statements listed in the standard, and all the occupational specific statements              |

|  |  |
|--|--|
| Accept and exercise personal responsibility  | Behaviour – Personal responsibility, resilience and ethics   |
| Use effective communication and interpersonal skills   | Behaviour – Effective communication and interpersonal skills   |
| Make a personal commitment to an appropriate code of professional conduct, recognising obligations to society, the profession and the environment. | Behaviour - Continuous personal development. Reflect on skills, knowledge and behaviours and seeks opportunities to develop, adapt to different situations, environments or technologies and have a positive attitude to feedback and advice |
| <b>Military Professional Competencies</b>  | <b>Engineering Technician Core Knowledge, Skills and Behaviours</b>  |
| Use trade knowledge and understanding to apply technical and practical skills  | All nine core knowledge and skills statements and all the occupational specific statements   |
| Contribute to the duties typical of the relevant option  | All eight core skills statements and all the occupational specific statements  |
| Accept and exercise personal responsibility  | Behaviour – Personal responsibility, resilience and ethics   |
| Use effective communication and interpersonal skills   | Behaviour – Effective communication and interpersonal skills   |
| Make a personal commitment to an appropriate code of professional conduct, recognising obligations to society, the profession and the environment. | Behaviour - Continuous personal development. Reflect on skills, knowledge and behaviours and seeks opportunities to develop, adapt to different situations, environments or technologies and have a positive attitude to feedback and advice |

## **B2.1 Portfolio of Evidence**

Before the Occupational Competence Validation Interview (Viva) each apprentice will prepare and submit a supporting portfolio of evidence to the employer which will be assessed during the interview. This portfolio will enable the apprentice to demonstrate to the employer the specific work related tasks that they have completed in order to demonstrate how they have achieved both occupational and professional competence set out in the Engineering Technician Standard and Employer Occupational Brief. The portfolio will also give the apprentice the opportunity to demonstrate to the employer that they understand the organisation in terms of their products, processes, procedures, tools, equipment, materials, documentation and information systems by showcasing what they have done, what they have learnt and how they have applied this knowledge and skills to real work tasks including solving problems encountered whilst undertaking activities in the workplace. The interview will cover all of the knowledge, skills and behaviours in the standard, through a combination of the work produced in the portfolio, and the apprentice's responses to the questions raised during the viva. Apprentices will need to respond to a bank of questions, which will cover core knowledge, skills and behaviours and include questions on the relevant optional pathway they have chosen. This will confirm occupational competence.

The portfolio of evidence will show how the apprentice has demonstrated the knowledge, skills and behaviours required to be competent in the selected occupational job role as detailed in Engineering Technician Standard including professional competence at EngTech / Military Professional Competence (MPC) level as applicable.

The portfolio will include as a minimum:

### **B2.1.1 Occupational Competence**

Three different examples of competent performance evidence that must include:

- Specific records of the work undertaken by the apprentice including any quality/compliance records, reports or documents produced as part of the work activity

together with:

- Evidence of the way the apprentice carried out the activities to meet the requirements of the Standard, such as assessor observations, supervisor/mentor references/ witness testimonies or authenticated apprentice reports of the activities undertaken.

### **B2.1.2 Professional Competence – Engineering Technician (EngTech) / Military Professional Competence (MPC)**

The apprentice's portfolio will also contain sufficient, valid and reliable evidence which is referenced to the professional competence requirements. This will be recorded in the appropriate professional competence Performance Indicators Recording Form demonstrating where the apprentice has met the appropriate professional competence criteria:

#### **Engineering Technician (EngTech)**

- Use engineering knowledge and understanding to apply technical and practical skills
- Contribute to the design, development, manufacture, construction, commissioning, operation or maintenance of products, equipment, processes, systems or services
- Accept and exercise personal responsibility
- Use effective communication and interpersonal skills (behaviours)
- Make a personal commitment to an appropriate code of professional conduct, recognising obligations to society, the profession and the environment.

#### **Military Professional Competence (MPC)**

- Use trade knowledge and understanding to apply technical and practical skills
- Contribute to the duties typical of the relevant option
- Accept and exercise personal responsibility
- Use effective communication and interpersonal skills
- Make a personal commitment to an appropriate code of professional conduct, recognising obligations to society, the profession and the environment.

Employer Assessors/mentors and/or their nominated Training Provider/Assessor should assist the apprentice in planning, creating and recording evidence to create the portfolio to ensure opportunities to obtain all the necessary competencies, skills and knowledge and behaviours are identified but it is the employer who determines whether the portfolio demonstrates the required standard for occupational competence, the portfolio will be submitted to the employer representative undertaking the Occupational Competence Validation Interview (Viva). Further guidance on how to conduct a viva interview will be provided by the relevant PEI.

If the review and assessment of the portfolio of evidence, in its entirety does not contain sufficient evidence to meet the standard then it will be deemed not yet ready to submit for Occupational Competence Validation Interview (Viva). The apprentice will be advised about the shortfalls in evidence and how this can be addressed. Note. All Military apprentices will meet the requirements for EngTech recognition should the apprentice wish to apply for membership.

## **B2.2 Occupational Competence Validation Interview (Viva)**

The Occupational Competence Validation Interview is an interactive interview focused on all the components of the Apprenticeship Standard, which will enable the employer to validate the apprentices' occupational competence. It is a structured and formal discussion between the apprentice and their employer, drawing upon a portfolio of evidence, and records of how the apprentice has performed during the Apprenticeship. It covers both what tasks the apprentice has completed in the workplace, the standard of their work, and the behaviours they have demonstrated throughout, such as, being a team player, having a positive attitude, a strong work ethic, being responsible employee, self-motivated and a proven commitment to the organisation. This enables the end point assessment to cover a broad range of knowledge and understanding, skills and behaviours set out in the standard, such as:

- the different methods and techniques used, including equipment, tools and other resources as applicable to the work tasks undertaken
- the organisation's quality/compliance processes and procedures and documentation
- the technical knowledge required to carry out work tasks safely and effectively
- being proactive in finding solutions to problems and identifying areas for improving the organisation.
- demonstrate effective interpersonal skills (behaviours)
- complying with statutory, regulatory, organisational and health and safety regulations while carrying out the engineering or manufacturing activities.

It will also be an opportunity for the employer to:

- clarify any points and/or probe the apprentice on the evidence they have presented in their portfolio
- confirm and validate that the portfolio of evidence is the apprentices own work
- confirm and validate the judgements about the quality of the work the apprentice has completed
- explore particular areas of work presented in the portfolio, how it was carried out, any problems that they encountered and how these were resolved

- validate the apprentices skills and knowledge and understanding of the organisation in terms of their products, processes, procedures, tools, equipment, materials, documentation and information systems.

The Occupational Competence Validation Interview will also elicit the apprentice's depth and breadth of understanding of the professional competence requirements. This will be evidenced in the appropriate Professional Competence Performance Indicators Recording Form.

Note: Before the Occupational Competence Validation Interview (Viva) can take place, the employer must have evidence that the apprentice has achieved the mandatory vocational qualifications/certification requirements for this Standard - completed during the "On Programme" phase of the apprenticeship. See Section E1 for the list of mandatory qualifications required for each occupational pathway.

On completion of the Occupational Competence Validation Interview (Viva) the apprentice will be awarded a grade of Pass or Fail. i.e. Competent or not yet Competent.

#### **Independent Assessment of Professional Competence (EngTech/MPC) and quality assurance of the Employer Viva**

On successful completion of the Occupational Competence Validation Interview (Viva) i.e. achieving a pass grade, this with the completed Professional Competence Performance Indicators Form and any supporting evidence, will be sent to the employer designated End Point Assessment Organisation i.e. a relevant Professional Engineering Institution (PEI) or Military Independent Assessment Authority to assess the apprentice's readiness for professional competence.

On receipt of the completed apprentice End Point Assessment documentation, the designated Professional Engineering Institution (PEI) or Military Independent Assessment Authority (MIAA) quality assures the documentation including checking that the employer approved mandatory qualifications have been achieved and certificated. They will then notify the employer in writing if the apprentice has been successful or not. If not, the apprentice will be advised of the shortfall in evidence in either the employer Viva or Professional Competencies (EngTech/MPC).

Final Sign Off – Employer Endorsement & Application for Apprenticeship Completion Certificate

If successful, i.e. the employer has received confirmation from the selected Professional Engineering Institution (PEI) or Military Independent Assessment Authority (MIAA) stating that the apprentice has met the professional competence criteria, the employer will undertake the Final Sign Off of the Apprenticeship by signing the last section on the Occupational Competence Validation Interview (Viva) document along with the apprentice.

The relevant Professional Engineering Institution (PEI) or Military Independent Assessment Authority (MIAA) who are on the Register of Apprenticeship Assessment Organisations then applies for the apprenticeship completion certificate.

## B3 Who will do the assessment?

The end point assessment will be undertaken by a range of parties depending upon the nature of what is being assessed. For final judgements to be made the following is required:

- 1) The employer will have final judgement on the Occupational Competence of the apprentice.
- 2) The Independent Assessor(s) from the relevant Professional Engineering Institution (PEI) or Military Independent Assessment Authority (MIAA) will have final judgement on the Professional Competence of the apprentice by reviewing, assessing and verifying the evidence and any supporting documentation contained in the following:
  - Occupational Competence Validation Interview (Viva)
  - Relevant Professional Competence Performance Indicators Recording Form

### B3.1 The Employer

- The employer will conduct the Occupational Competence Validation Interview (Viva) to assess occupational competence. The employer is best placed to determine whether an apprentice has the required knowledge, skills and behaviours to fulfil the designated role, a support guide will be produced and available to assist the employer during the interview and is available from the relevant Professional Engineering Institution (PEI) or Military Independent Assessment Authority (MIAA) . The employer will have understanding and expertise in the area in which the apprentice works and will know what questions to ask the apprentice in order to ascertain their level of competency. This will be particularly important due to the health and safety critical nature of the sector. During this Viva, the apprentice will need to demonstrate competence of the appropriate knowledge, skills and behaviours specified in the Standard to the employer, drawing from real work based tasks accomplished, presenting not only what they have done, but how they have done it and why. The apprentice's use of a Portfolio of Evidence is important here so that the employer can see tangible evidence. This will be recorded in the Occupational Competence Validation Interview (Viva) document.

- The employer will also review the relevant Professional Competence Performance Indicators Recording Form in preparation for submission to the relevant Professional Engineering Institution (PEI) or Military Independent Assessment Authority (MIAA) for a final independent assessment of professional competence.

### **B3.2 Independent Assessor(s) from the relevant Professional Engineering Institution (PEI) or Military Independent Assessment Authority (MIAA)**

- Independent assessor(s) will assess the initial judgement made by the employer recorded on the appropriate Professional Competence Performance Indicators Recording Form. In terms of making their final independent judgement of Professional Competence this will be based on EngTech requirements as defined in the Engineering Council's UKSPEC or the Military Professional Competence requirements as defined by the Military Independent Assessment Authority (MIAA). The independent assessor(s) must be affiliated to the relevant Professional Engineering Institution (PEI) or Military Independent Assessment Authority (MIAA) with which the employer selected to undertake the independent end point assessment.
- Assessor(s) from the Professional Engineering Institution (PEI) or Military Independent Assessment Authority (MIAA) will also quality assure the Viva documentation, signed by the employer and used to assess Occupational Competence. They will also check that the employer approved mandatory qualifications have been achieved and certificated. However, it is the employer who will make the final judgement of an apprentice's Occupational Competence.

### **B3.3 Final Sign Off – Employer Endorsement & Application for Apprenticeship Completion Certificate**

If successful, the employer will undertake the Final Sign Off / Employer Endorsement stage of the Apprenticeship by:

- accepting the assessment decision of the Professional Engineering Institution (PEI) or Military Independent Assessment Authority (MIAA) including the quality assurance of the Viva, the confirmation that the apprentice has achieved the correct mandatory qualifications and have received confirmation from the Professional Engineering institution (PEI) or Military Independent Assessment Authority (MIAA) that the apprentice has met the appropriate professional competencies i.e EngTech or MPC
- signing the last section on the Occupational Competence Validation Interview (Viva) document along with the apprentice



### Applying for the Apprenticeship completion certificate

- On receipt of the fully signed Viva Form the selected Professional Engineering Institution (PEI) or Military Independent Assessment Authority, who are on the Register of Apprentice Assessment Organisations then applies for the apprenticeship completion certificate.

## B4 How will assessments be quality assured?

### B4.1 Internal QA –Professional Competence – Engineering Technician (EngTech) or Military Professional Competence (MPC)

- The Professional Engineering Institutions (PEIs). All end point assessment applications will be reviewed by a minimum of 2 trained assessors against the Engineering Council UKSPEC requirements. The performance of EngTech assessors is continuously monitored. In addition, all PEIs are required by the Engineering Council to conduct internal audit reviews of the process, on a sampling basis.
- All those involved in the assessment process, are required to undertake initial and on-going training. This includes updating on UK-SPEC requirements, good practice in assessing, process and any quality issues that could be raised during the assessment process.
- Requirements for EngTech Assessors:
  - EngTech Assessors must be registered via a relevant Professional Engineering Institution at EngTech level or above
  - Have up to date working knowledge of the engineering sector including the specific competencies required by an Engineering Technician
  - They will understand the Apprenticeship Standard End Point Assessment process including the evidence required to meet the EngTech criteria and Employer Occupational Competence Validation Interview (Viva).
- As the licencing body for the professional engineering institutions, the UK Engineering Council sets and upholds the standards for professional registration against which all assessments are made in all PEIs – UK-SPEC. The Engineering Council undertakes regular monitoring of the PEIs, including a full audit every 5 years, with an interim review audit in between.
- The Military Aviation Authority (MAA) provides regulatory oversight of all aspects of service military aviation, including the training of personnel. The regulations and procedures followed by the Military Independent Assessment Authority (MIAA) are governed and audited by the MAA by means of a system of audits laid out in the regulatory articles.

- Requirements for Military Professional Competence (MPC) Assessors:
  - MPC Assessors are employed and appointed by the Apprenticeship Management Team
  - Have up to date working knowledge of the engineering sector including the specific competencies
  - They will understand the Apprenticeship Standard End Point Assessment process including the evidence required to meet the MPC criteria and Employer Occupational Competence Validation Interview (Viva).
- Internal quality assurance of the assessment standards, processes and decisions of both the knowledge component and the competence components, and the procedures and processes involved in the administration is provided by regular IQ audits carried out by the respective Service Apprenticeship Management Team.
- The relevant Military Independent Assessment Authority provides Internal Quality Assurance for the End Point Assessment process, by validating apprentice achievement of mandatory qualifications and employer Viva.

#### **B4.2 PEI or MIAA Internal QA of Employer Occupational Competence Validation Interview**

- Hold and maintain a register of employer designated technical experts approved to undertake the occupational competence validation interview aligned to the criteria specified in the guidance documentation. These experts are likely to have been selected from the apprentice's employer, and will have been identified as competent to do this role.
- Provide training for employer designated technical experts undertaking the end point assessment - occupational competence validation
- Monitor employer designated technical experts' moderate outcomes

- The relevant PEI holds regular standardisation events with employer designated technical experts including the review and moderation of assessment decisions and provide feedback to ensure the standardisation of assessment decisions and to provide the basis for improvement and CPD opportunities
- Provide employers with Internal Quality Assurance process and End Point Assessment recording documents including
  - The Occupational Competence Interview (Viva) Recording Form and supporting guidance
  - The Engineering Technician (EngTech) or Military Competence Performance Indicators Recording Form and supporting guidance
  - A register of employer and PEI approved Awarding Organisation qualifications
- Maintain and manage a complaints' and appeals procedure for both the occupational competence and professional competence stages of the End Point Assessment. If unresolved the Independent Assessment Organisation will contact the EQA organisation and follow their appeals process

### **B4.3 External Quality Assurance**

We are investigating options for External Quality Assurance with the Engineering Council and the Assessment Plan will be updated once those arrangements are confirmed.

## **SECTION C – Grading**

### **C1 How will grading be applied?**

The following grading will apply for the End Point Assessment:

- For the Occupational Competence Validation Interview (viva) this will be a binary pass / fail grade
- For the Professional Competence this will be pass / fail i.e. a pass will mean that apprentices have met the requirements for EngTech or Military Professional Competence. Therefore should apprentices wish to apply for professional registration they are deemed as EngTech ready.

Due to the complex and safety critical nature of the industry a grading exemption note has been granted.

## SECTION D - Implementation

### D1 Affordability

The costs allocated to end point assessment equates to no more than 10% of the overall cost of this apprenticeship. The cost for end point assessment includes the following:

- Occupational Competence Validation Portfolio Collation
- Occupational Competence Validation Interview (Viva)
- Assessment of Professional competence
- Viva quality assurance including checking that the mandatory qualifications have been achieved
- Employer "Final sign off"
- Apprenticeship Certificate
- External Quality Assurance

### D2 Capacity planning for End Point Assessment Volumes

Employers and the relevant Professional Engineering Institutions (PEIs) and the Military Independent Assessment Authority have conducted a feasibility analysis to ensure that there will be sufficient capacity to meet the number of apprentices requiring End Point Assessment including when, during the calendar year that the assessment is likely to be required. We are planning to start with 1000 in order to test the process and this will allow us to fully understand the challenges and plan accordingly to meet future needs of the 5000+ apprentices by 2020 that will be using this Standard.

## SECTION E – The Journey to End Point Assessment - “On Programme”

### E1 Foundation and Development Phase Mandatory Qualifications

- Level 2 Maths and Level 2 English

**Plus**

- the qualification requirements specified for **one** of the following occupational pathways (NB all Mandatory Qualifications listed below to be made available by September 2017 and will be reviewed in 2018 as part of a “Phase 2” Engineering Technician publication with a view to rationalisation of qualifications where applicable).

| Occupational Pathway   | Foundation Phase   | Development Phase   | Additional information |
|--|--|---|------------------------|
| Aerospace Manufacturing Fitter                                   | Level 2 Diploma in Aerospace and Aviation Engineering (Foundation Competence)<br>and<br>Level 2 Diploma in Aerospace and Aviation Engineering (Foundation Knowledge) | Level 3 Diploma in Aerospace Manufacturing (Development Competence)<br>and<br>Level 3 Diploma in Aerospace and Aviation (Development Knowledge) |                        |
| Aerospace Manufacturing Electrical/Mechanical and Systems Fitter | Level 2 Diploma in Aerospace and Aviation Engineering (Foundation Competence)<br>and<br>Level 2 Diploma in Aerospace and Aviation Engineering (Foundation Knowledge) | Level 3 Diploma in Aerospace Manufacturing (Development Competence)<br>and<br>Level 3 Diploma in Aerospace and Aviation (Development Knowledge) |                        |

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|---|--|---|--|
| <p>Aircraft Maintenance Fitter/Technician (Fixed &amp; Rotary Wing)</p> | <p>Level 2 Diploma in Aerospace and Aviation Engineering (Foundation Competence)<br/>Or<br/>Level 2 Diploma in Aerospace and Aviation Engineering (Military Foundation Competence)</p> | <p>Level 3 Diploma in Aviation Maintenance (Development Competence)<br/>Or<br/>Level 3 Diploma in Aviation Maintenance (Development Competence) – Military<br/>Plus one of the following technical knowledge qualifications<br/>Level 3 Diploma in Aircraft Maintenance (Civil Aircraft Mechanical) approved by the CAA<br/>Level 3 Diploma in On-Aircraft Maintenance Category A<br/>Level 3 Diploma in Aircraft Maintenance (Military)<br/>EASA Aircraft Maintenance Licence Category A, Part 66 modules through an approved Part 147 Training Organisation</p> | <p>Note this occupational pathway has three routes.<br/>1. Maintenance Fitter / Technician.<br/>2. Maintenance Fitter / Technician – EASA Licence Category A<br/>3. Maintenance Fitter / Technician – Military<br/>Those apprentices undertaking pathway Route 2 - Maintenance Fitter / Technician – EASA Licence Category A must achieve a minimum pass grade at 75% for all modules/units in the Level 3 Diploma in Aircraft Maintenance (Civil Aircraft Mechanical) approved by the CAA <b>or</b> EASA Aircraft Maintenance Licence Category A, Part 66.<br/>Route 2: Apprentices need to make a submission to the CAA to meet regulatory requirements before End Point Assessment.</p> |
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| <p>Airworthiness Planning, Quality and Safety Technician</p> | <p>Level 2 Diploma in Aerospace and Aviation Engineering (Foundation Competence) – Airworthiness Planning, Quality and Safety Technician</p> | <p>Level 3 Diploma in Airworthiness Planning, Quality and Safety (Development Competence)</p> <p>Or</p> <p>L3 Extended NVQ Diploma<sup>®</sup> Engineering Technical Support</p> <p>Or</p> <p>Level 3 Diploma in Advanced Manufacturing Engineering (Development Competence)<sup>®</sup> Technical Support</p> <p>Plus one of the following technical knowledge qualifications</p> <p>Level 3 Diploma in Aircraft Maintenance (Civil Aircraft Mechanical) – approved by the CAA</p> <p>Level 3 Diploma in Aircraft Maintenance (Military)</p> <p>Level 3 Diploma in On-Aircraft Maintenance-Category A</p> <p>EASA Aircraft Maintenance Licence Category A Part 66 modules through an approved Part147 Training Organisation</p> |  |
|--|--|--|--|

|                            |   |   |  |
|----------------------------|---|---|--|
| Maritime Electrical Fitter | Level 2 Diploma in Maritime Defence (Foundation Competence) and<br>Level 2 Diploma in Maritime Defence (Foundation Knowledge) | Level 3 Diploma in Maritime Defence (Development Competence) and<br>Level 3 Diploma in Maritime Defence (Development Knowledge) |  |
| Maritime Mechanical Fitter | Level 2 Diploma in Maritime Defence (Foundation Competence) and<br>Level 2 Diploma in Maritime Defence (Foundation Knowledge) | Level 3 Diploma in Maritime Defence (Development Competence) and<br>Level 3 Diploma in Maritime Defence (Development Knowledge) |  |
| Maritime Fabricator        | Level 2 Diploma in Maritime Defence (Foundation Competence) and<br>Level 2 Diploma in Maritime Defence (Foundation Knowledge) | Level 3 Diploma in Maritime Defence (Development Competence) and<br>Level 3 Diploma in Maritime Defence (Development Knowledge) |  |
| Maritime Pipeworker        | Level 2 Diploma in Maritime Defence (Foundation Competence) and<br>Level 2 Diploma in Maritime Defence (Foundation Knowledge) | Level 3 Diploma in Maritime Defence (Development Competence) and<br>Level 3 Diploma in Maritime Defence (Development Knowledge) |  |



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| Machinist – Advanced Manufacturing Engineering | Level 2 Diploma in Advanced Manufacturing Engineering (Foundation Competence) and<br>Level 2 Diploma in Machining (Foundation Knowledge) | Level 3 Diploma in Advanced Manufacturing Engineering (Development Competence) – Machining<br>and<br>Level 3 Diploma in Machining (Development Knowledge)  |  |
| Mechatronics Maintenance Technician            | Level 2 Diploma in Advanced Manufacturing Engineering (Foundation Competence)  | Level 3 Diploma in Advanced Manufacturing Engineering (Development Competence) – Mechatronics Maintenance Technician<br>Plus one of the following technical knowledge qualifications<br>Level 3 Diploma in Engineering Technology (QCF) – for starts up to June 2017 only<br>Level 3 Extended Diploma in Engineering Technologies (QCF) - for starts up to June 2017 only<br>Level 3 Diploma or Extended Diploma in Advanced Manufacturing Engineering (Development Knowledge) - for starts from 1 <sup>st</sup> July 2017 |  |

|   |   |  |  |
|---|---|--|--|
| Product Design and Development Technician | Level 2 Diploma in Advanced Manufacturing Engineering (Foundation Competence) | <p>Level 3 Diploma in Advanced Manufacturing Engineering (Development Competence) – Product Design and Development Technician</p> <p>Plus one of the following technical knowledge qualifications</p> <p>Level 3 Diploma in Engineering Technology (QCF) – for starts up to June 2017 only</p> <p>Level 3 Extended Diploma in Engineering Technologies (QCF) - for starts up to June 2017 only</p> <p>Level 3 Diploma or Extended Diploma in Advanced Manufacturing Engineering (Development Knowledge) - for starts from 1<sup>st</sup> July 2017</p> |  |
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|---|---|--|--|
| Toolmaker and Tool and Die Maintenance Technician | Level 2 Diploma in Advanced Manufacturing Engineering (Foundation Competence) | <p>Level 3 Diploma in Advanced Manufacturing Engineering (Development Competence) – Toolmaker, Tool and Die Maintenance</p> <p>Plus one of the following technical knowledge qualifications</p> <p>Level 3 Diploma in Engineering Technology (QCF) – for starts up to June 2017 only</p> <p>Level 3 Extended Diploma in Engineering Technologies (QCF) - for starts up to June 2017 only</p> <p>Level 3 Diploma or Extended Diploma in Advanced Manufacturing Engineering (Development Knowledge) - for starts from 1<sup>st</sup> July 2017</p> |  |
| Technical Support Technician                      | Level 2 Diploma in Advanced Manufacturing Engineering (Foundation Competence) | <p>Level 3 Diploma in Advanced Manufacturing Engineering (Development Competence) – Technical Support and</p> <p>Level 3 Diploma or Extended Diploma in Advanced Manufacturing Engineering (Development Knowledge)</p>   |  |

## E2 The Employer Occupational Brief (EOB) – Information for Awarding Organisations

ST0457/AP03

The Employer Occupation Brief is an all-embracing term and will contain a number of separate documents including:

- a) Foundation Phase - Employer Units of Competence.
- b) Foundation Phase - Qualification Structure(s)
- c) Development Phase - Employer Units of Competence
- d) Development Phase - Qualification Structure(s)
- e) Qualification Assessment Strategy for Foundation & Development Phase Occupational Competence qualifications
- f) A register of employer and PEI/MIAA approved Awarding Organisation qualifications (this must be used by the EPA Organisation when checking that the correct mandated qualifications have been achieved)

The EOB must be used by Awarding Organisations in order to develop the mandatory occupational competence qualifications achieved during the on programme phase of the apprenticeship.

The Employer Occupational Brief and associated documents can be accessed from Semta - [standards@semta.org.uk](mailto:standards@semta.org.uk)